Data Bases Architecture Documentation

Background

Large databases, once structured and in place, tend to become the "rocks" around which systems are built. Some get large as the natural product of growth from small, analysts files, and others are created large in the process of developing large processing systems. In either case, their size and the investment they represent tend to make them immutable objects around which large applications software packages have to be developed. As such, they limit the systems designer's options with respect to systems architecture and sometimes even the services that can be provided.

A key aspect of integrating, coordinating, and guiding the overall architecture of systems development is defining the present status with respect to the Agency's medium and large size databases. Of particular concern are databases which are fed electronically, by Community inputs, and databases which are interrelated, either directly or indirectly.

Brief Statement of Work

The objective of this effort is to develop a catalog of all the databases which are significant databases now, or likely to become significant. They are principally those identified previously as being of particular concern. The catalog is also to diagram the data flow into, among, and out of these databases.

For each database inventoried, the data reported should include:

- Size
- Schema
- Database management system identification
- Associated applications software utilities, if any
- Inquiry processing language and inquiry formatting
- Resident environment (OS, computer)

Of particular concern are the databases which are on-line to a community of users and databases which interrelate. For the latter, diagrams are to be drawn showing the data flows, whether direct or indirect. For each such indicated data flow, the data is to be identified.

The product of this effort is to be a document which is an inventory of all the relevant databases and networks describing their interrelationships. A hierarchical structure to the networks may be necessary.

Scope of the Effort

It is anticipated that this effort will require the application of 16 man-months of professional effort over 8 months, plus appropriate secretarial, editing, and administrative support.

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Internal Communications Update

Background

In 1979, a standard-setting study was performed to describe the data communications network within the Agency Headquarters Building.* The study was performed because it was realized that the system had grown to a size and complexity that nobody knew it as a whole. It needed to be documented.

Since that publication, there has been continued growth in the system. There have also been identified areas where further data is needed.

Brief Statement of Work

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The product of this effort should be an updated documentation of the Headquarters data traffic.

Scope of the Effort

It is anticipated that this effort will require the application of 8 man-months of professional effort over 4 months, plus appropriate secretarial, editing, and administrative support.

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*"Flow of Electrical Traffic in the Headquarters Building," ODP Applications, December 1979.

External Communications Documentation

Background

    The external (outside Headquarters) communications facilities of the Agency are a fundamental part of the information flow network. Some of the facilities are not Agency properties, such as [   ] but are key portions of Agency links.

    It is important in planning the external flow of data to have a clear picture of the existing system architecture. This picture has to provide capacities, availabilities, and robustness. The structure of processing at nodal point, such as the deployed CRAFT centers, will depend in some measure on the characteristics of the existing and planned external communications network capabilities.

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Brief Statement of Work

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    The product of this effort will be a document describing the external communications system of the Agency. It shall provide functional descriptions, and network architectures, as discussed.

Scope of the Effort

    It is anticipated that this effort will require the application of 20 professional man-months over 8 months, plus appropriate secretarial, editing, and administrative support.